

Remarks

I. Introduction

This is in response to the Office Action dated April 19, 2005. The Office Action rejected claims 1-31 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,374,112B1 (Widegren) in view of U.S. Patent Publication No. US2001/0032254A1 (Hawkins). The Office Action also rejected claims 4, 5, 7, 16, 17-21, and 18 under 35 U.S.C. §103(a) as being unpatentable over Widegren in view of Hawkins and further in view of U.S. Patent No. 5,912,894 (Duault). The Office Action also rejected claims 6, 8, 10, 15, and 18 under 35 U.S.C. §103(a) as being unpatentable over Widegren in view of Hawkins and further in view of Duault and further in view of U.S. Patent No. 6,771,601B1 (Aydemir).

In response to the §103 rejections, Applicants have amended claims 1 and 28. Applicants have also amended claims 5, 7, 11, 16, 17, 20, 22, 26, and 31. Claims 1-31 remain for consideration.

II. Rejections under 35 U.S.C. §103(a)

Claims 1-31 were rejected under 35 U.S.C. §103(a) as being unpatentable over Widegren in view of Hawkins. None of the references, either alone or in combination, disclose Applicants' invention.

The present invention generally relates to a wireless network having proxy servers for controlling the quality of service (QoS) in wireless networks. The proxy servers improve the QoS by transforming data during periods of relatively high network congestion. The data transformation, which is based upon network conditions, can include, for example, data compression, transcoding, and content removal.

Independent claim 1 is directed to a method for transmitting data through an IP network. Claim 1, as amended, contains the step of:

selectively transforming the data at a proxy server coupled to a base station, based upon the network conditions.

Thus, amended claim 1 claims transforming data based upon network conditions. An example of a data transformation includes reducing data content during periods of relatively high congestion. Widegren, however, discloses a Universal Mobile Telephone Communications System (UMTS) Terrestrial Radio Access Network (UTRAN) that responds to radio access bearer service requests with flexible and efficient allocation of resources needed to support a communication with a mobile radio. In particular, the Office Action states that Widegren discloses, at col. 3, lines 34-54, that the UTRAN “‘maps’ or allocates the radio access bearer to physical transport and radio channel resources through the UTRAN and over the radio air interface, respectively.” The mapping is based on one or more parameters such as one or more traffic condition parameters. Widegren, therefore, discloses a mapping scheme for the radio channel resources used based on parameters.

Widegren does not, however, disclose *transforming* data from one form to another form based upon network conditions. In particular, Widegren does not disclose transforming data (e.g., reducing data content during periods of relatively high congestion). Widegren is focused on mapping radio access bearers onto physical transport channels “in a flexible, efficient, and optimal manner”, as described in col. 6, lines 9-26.

Furthermore, Hawkins fails to cure the deficiencies of Widegren. Hawkins discloses, in the Abstract, a device for providing wireless Internet access. Hawkins further discloses, in paragraph [0251], transforming a message into an HTML request and transmitting the HTML request to the source of data. Hawkins does not, however, disclose transforming data *based upon network conditions*. Although Hawkins does disclose transforming a message into an HTML request, Hawkins does not disclose transforming data based upon network conditions. Hawkins is focused on creating a wireless information

solution for handheld devices in providing a product that is both useful and practical given the bandwidth and power requirements of a wireless radio.

Thus, neither Widegren nor Hawkins, either alone or in combination, disclose all of the limitations of independent claim 1.

Independent claim 28 is directed to a wireless network. Claim 28 claims the step of a proxy server in communication with a first one of [a] plurality of base stations for selectively reducing data based upon a level of congestion in a radio link of the first one of the plurality of base stations.

The Office Action states that Widegren discloses, in col. 2, line 49 – col. 3, line 5 and col. 3, lines 44-54, a method and system for determining network conditions for data through the IP network. As described above, Widegren discloses a mapping of the radio access bearer to physical transport and radio channel resources. The mapping is based on parameters associated with the radio access bearer service request. The parameters may include one or more traffic condition parameters, like a congestion level on a common channel, an interference level in the geographic location area in which the mobile radio is, etc. Thus, Widegren *maps resources* based on parameters such as congestion level on a common channel. Widegren does not disclose reducing data based upon a level of congestion in a radio link. Further, the Office Action admits that Widegren fails to disclose the use of a proxy server for selectively transforming the data within a network.

The Office Action additionally states that Hawkins discloses, in paragraphs [0251] and [0713], selectively transforming the data at a proxy server coupled to a base station based upon network conditions. Hawkins does not, however, disclose a) reducing data, or b) reducing data *based upon a level of congestion*, or c) reducing data based upon a level of congestion *in a radio link*. Hawkins is instead focused on creating a wireless information solution for handheld devices in providing a product that is both useful and practical given the bandwidth and power requirements of a wireless radio. Hawkins does not disclose reducing

data and also does not disclose reducing data based upon a *level of congestion*. Therefore, Hawkins does not disclose reducing data based upon a level of congestion in a radio link. Thus, the limitations claimed in independent claim 28 are not disclosed in Hawkins.

For the reasons discussed above, all independent claims are allowable over the cited art. Allowance of all independent claims is requested. All remaining claims are dependent upon an allowable independent claim and are therefore also allowable. In addition, the dependent claims add additional patentable subject matter and are also allowable for the reasons discussed below.

Dependent claims 4, 5, 7, 16, and 17-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Widegren in view of Hawkins and further in view of Duault. None of the references, either alone or in combination, disclose Applicants' invention.

Dependent claims 4, 5, 7, 16, and 17-21 relate to assigning one or more thresholds associated with a level of congestion from a base station for different users. Although Widegren discloses a mapping scheme for the radio channel resources used based on parameters, and Hawkins discloses a device for providing wireless Internet access, the Office Action admits that neither Widegren nor Hawkins disclose assigning multiple thresholds for different users. The Office Action relies on Duault for providing the missing element.

Duault, however, discloses a method and system that dynamically adjusts the communication bandwidth assigned to an audio channel connection in a high speed digital network. Duault does not disclose assigning multiple thresholds for different users. Duault instead discloses defining an activity bit for each block of audio channel signal and then dynamically adjusting the assigned network communication bandwidth accordingly. Duault does not, however, disclose assigning one threshold for one user and another threshold for another user. In particular, Duault does not focus on altering a threshold based on a user.

Thus, neither Widegren, Hawkins, nor Duault, either alone or in combination, disclose all of the limitations of dependent claims 4, 5, 7, 16, and 17-21.

Dependent claims 12-15, 22, 25, and 27 relate to selecting a control delay corresponding to a delay of a feedback signal from a base station to a proxy server. The Office Action states that Widegren discloses compression and quality of service parameters such as transfer or control delay, bit rate, and frame loss ratio. Widegren does not, however, disclose any type of feedback signal and, therefore, does not disclose selecting a control delay corresponding to a delay of a *feedback signal* from a base station to a proxy server.

Neither Hawkins nor Duault cure the deficiencies of Widegren. In particular, neither Hawkins nor Duault disclose any type of feedback signal and, therefore, do not disclose selecting a control delay corresponding to a delay of a *feedback signal* from a base station to a proxy server.

Thus, neither Widegren, Hawkins, nor Duault, either alone or in combination, disclose all of the limitations of dependent claims 12-15, 22, 25 and 27.

Dependent claims 6, 8, 10, 15, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Widegren in view of Hawkins and further in view of Duault and further in view of Aydemir.

These dependent claims relate to setting a threshold based upon expected performance from a queueing model of the network. The Office Action admits that Widegren, Hawkins, and Duault do not disclose a network performance based on a queueing model.

Aydemir discloses a network switch for controlling congestion at a granularity of less than a link. The Office Action states that Aydemir discloses, in Fig. 2, the abstract, and col. 7, lines 1-22, link level congestion control by having sub-queues for its output port queues which correspond to input ports. The

Office Action also states that flow control through a network switch having numerous ports may occur by receiving a message for transmission from an input port of the network switch to an output port of the network switch and determining if the received message results in an indication of congestion associated with transmitting the received message onto the output port.

Aydemir does not, however, disclose basing network performance on a queueing model. Therefore, Aydemir does not cure the deficiencies of Widegren, Hawkins, or Duault. Thus, neither Widegren, Hawkins, Duault, nor Aydemir, either alone or in combination, disclose all of the limitations of dependent claims 6, 8, 10, 15, and 18.

Dependent claims 2-3, 9, 11, 23-24, 26, and 29-31 are also allowable because they depend from an independent claim.

III. No New Matter has Been Added

The amendments to claims 1, 5, 7, 11, 16, 17, 20, 22, 26, 28 and 31 do not add new matter. Support for the claim amendments are shown throughout the Specification and at least at the second paragraph on page 4 and the first full paragraph on page 5.

IV. Conclusion

For the reasons discussed above, all pending claims are allowable over the cited art. Reconsideration and allowance of all claims is respectfully requested.

Respectfully submitted,



Andrew F. Abramson
Reg. No. 52,538
Attorney for Applicant
Tel.: 973-533-1616

Date: July 14, 2005
AT&T Corp
Room 2A-207
One AT&T Way
Bedminster, NJ 07921